

Mediating for metadata standards: competing demands of E-government, archivists and librarians for resource description in New Zealand

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Abstract:

Over a tight-timeframe in 2000/2001, a New Zealand E-government Unit Working Group produced a metadata standard to assist New Zealanders find government information and services on its websites. During the same period, a NZ government portal was being designed, Archives New Zealand issued record keeping standards, and the National Library of New Zealand issued a metadata standards framework for resource discovery across all NLNZ media and for the Library's collections. This process has highlighted the significant need for cross-agency understanding and discussion, and the importance of maintaining and contributing to international standard development to ensure global inter-operability and transfer of information.

E-government in New Zealand

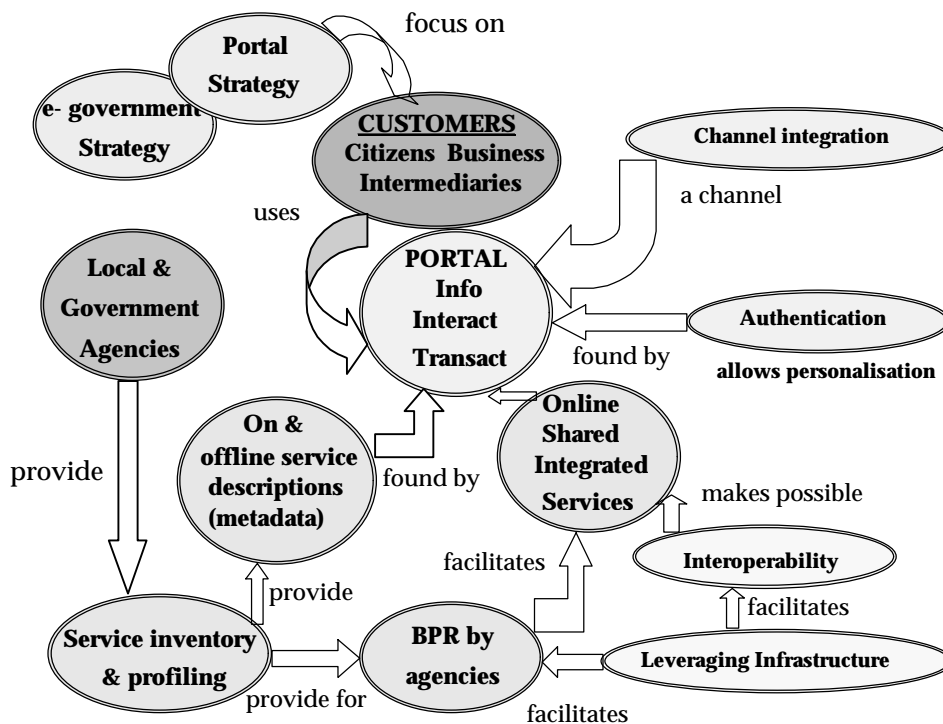
As in Australia, and globally, the NZ Government’s E-government programme is aimed at improving the ability of citizen-state interaction. This programme is focussing on the development of a NZ Government portal which will assist citizens and businesses to find government information and also transact with Government.

In 2000, a new NZ E-government vision was released and a NZ E-government Unit established in the State Services Commission, the key central agency responsible for machinery of government. The vision promised that by 2004:

“New Zealanders will be able to gain access to government information and services, and participate in our democracy, using the Internet, telephones and other technologies as they emerge.”

The diagram below illustrates the two strands of NZ portal development work: developing the standards, processes & mechanisms for describing government information & services, as well as developing the technical infrastructure and security.

New Zealand Portal Development Project Relationships



The E-government Unit expects a four-stage process of movement to interactive online services on the portal. These stages are:

- 1 **Publish** information and advertise forms and services provided on and offline;
- 2 **Interact** with customers and citizens, over design and delivery of forms and services, and development of policies;
- 3 **Transact** fully with customers via the portal;
- 4 **Integrate** functions and services across traditional agency boundaries, across levels of government, and across the boundaries of government, business, communities, and the individual.

Developing a Metadata Standard for Resource Description for E-government in New Zealand

Describing government information and services for E-government requires common policies, standards, rules and systems which are used across government, and which conform to or are compatible with international standards for resource description and for the international exchange of information.

In NZ it was decided that creating metadata which described the resources (information and services) on the NZ Government Portal would ensure a higher level of precision and recall for our customers than would be achieved by searching full-text on commercial search engines or the portal itself. This would give us certainty that searching on our portal would be effective. It also positioned us for a future time when government portals and websites are more commonly searched by commercial search engines. Finally, other jurisdictions had adopted or were developing metadata standard sets for resource discovery on their portals or websites, eg Australia, Canada, United Kingdom.

Government Information Discovery Enhancement (GUIDE) Project

The GUIDE Project was established in mid 2000 to develop appropriate standards and systems for New Zealand. It was an early E-government project, set up before the formal establishment of the E-government Unit. It built on earlier work (primarily geospatial) undertaken by the Ministry for the Environment (MfE) and Land Information New Zealand (LINZ) in association with the Officials Metadata Working Group.

The GUIDE Project was later split into two projects. GUIDE Framework was primarily concerned with developing a consistent and common way of describing government information and services. GUIDE Delivery considered the systems needed to create and access the metadata.

NZ Discovery Level Metadata Standard Working Group (NZMSWG)

The GUIDE Framework project set up this Working Group which had members from 32 agencies. I was a member of that committee, and also became a member of the GUIDE

Advisory Group which oversaw the two GUIDE projects. I am now a member of the Portal Implementation Advisory Group.

The initial tasks of the NZMSWG were to:

1. Make a recommendation as to whether the Australian Government Locator Service standard set (AGLS) was appropriate to be used as New Zealand's all of government discovery-level metadata standard, and
2. If AGLS was considered to be appropriate, determine how the AGLS standard set should be modified (if at all) to fit the New Zealand context.

The majority of the working group members agreed that AGLS was appropriate to use as the basis for developing a New Zealand standard, but that there were some major issues that needed to be addressed in the New Zealand context. (A vote by 66% or more of the group represented a majority decision).

The Group's next tasks were to:

1. Determine the appropriate processes by which the NZ discovery level metadata standard should be developed and maintained
2. Determine the extent to which maintenance of the standard should be done in conjunction with the AGLS Working Group, under the aegis of National Archives of Australia
3. Develop the standard to a useable level by 31 March 2001 and liaise with other agencies as needed to consult with and inform them of progress regarding work on the standard.

A draft metadata standard set and reference manual were completed by the due date. Following useability testing over the next few months, a revised standard set and reference manual was issued in September 2001 (NZGLS, 2001). By 30 May 2002, agencies are required to create a core set of metadata describing their information and services.

SOME METADATA CONTEXT

Metadata describe resources, information or data in a structured way. 'Discovery level' metadata is the information needed to locate a particular document, information collection, data set, or service. For example, a library catalogue contains information (metadata) that a person can use to find a particular information resource on a particular subject. A metadata standard sets out rules on how to describe items. This generally includes how the elements are implemented, which fields/elements *can* or *must* or *should* be used, which content formats and controlled lists of information must be used.

Dublin Core Metadata Initiative (DCMI)

"The Dublin Core Metadata Initiative is an open forum engaged in the development of interoperable online metadata standards that support a broad range of purposes and business models. The first Dublin Core Series Workshop took place in Dublin, Ohio in 1995. Since that

time, the DCMI has been committed to the continual refinement of a "core" foundation of property values and types to provide specific (or semantic) information about Web resources, much in the same way that library card catalogues provide indexed information about book properties.

The Dublin Core Metadata Element Set (DCMES) was the first metadata standard developed out of the DCMI as an IETF standard. DCMES provides a semantic vocabulary (elements) for describing 15 "core" information properties, such as "Description", "Creator" and "Date". In September 2001 the DCMES was adopted as ANSI/NISO standard Z39.85-2001.

Dublin Core metadata is used to supplement existing methods for searching and indexing Web-based metadata.” (Dublin Core Metadata Initiative, 2001)

Australian Government Locator Service (AGLS)

The AGLS metadata standard is a set of 19 descriptive elements which Australian government departments and agencies use to improve the visibility and accessibility of their services and information over the Internet. AGLS was developed in late 1997/early 1998, is based on Dublin Core and has four additional elements to cover resource description for E-government purposes.

While the National Archives of Australia is the lead agency for AGLS development and deployment, the initiative is a cooperative venture between the National Office of Information Economy and the Online Council officials.

NZ Government Locator Service (NZGLS)

NZGLS has the same 19 AGLS descriptive elements, but with some different definitions and implementation rules. New Zealand has been able to build on the evolving Dublin Core and AGLS work, and has developed that further, particularly in the area of describing government services. Thesauri listing New Zealand subject and function terms have also been developed.

Comparison of elements in Dublin Core, AGLS and NZGLS

The table shown here lists which elements are used in each metadata set. The extra AGLS and NZGLS elements are shown in grey in the bottom of the list. Elements are optional unless otherwise stated. Different elements are mandatory depending on whether an agency, service or document is being described.

Element	DCMES	AGLS	NZGLS
Creator	✓	✓Mandatory	✓Mandatory
Publisher	✓	✓Mandatory	✓Conditional (mandatory for published resources, otherwise optional)
Contributor	✓	✓	✓
Rights	✓	✓	✓
Title	✓	✓Mandatory	✓Mandatory
Subject	✓	✓Mandatory – either subject or function	✓Mandatory
Description	✓	✓	✓Recommended
Source	✓	✓	✓
Language	✓	✓	✓Recommended
Relation	✓	✓	✓
Coverage	✓	✓	✓
Date	✓	✓Mandatory	✓Recommended
Type	✓	✓	✓Mandatory (for the Category refinement)
Format	✓	✓	✓
Identifier	✓	✓Mandatory – either identifier or availability	✓Conditional (Mandatory when describing online resources)
Function	-	✓Mandatory – either subject or function	✓Mandatory
Availability	-	✓Mandatory – either identifier or availability	✓Conditional (Mandatory when describing online resources)
Audience	-	✓	✓Recommended
Mandate	-	✓	✓Recommended

ACHIEVING CONSENSUS ON THE NZ METADATA STANDARD WORKING GROUP

Looking back over the project, I think that the NZMSWG made remarkable progress in developing, testing and finalising a New Zealand metadata standard set over a period of about 15 months. This required a high level of commitment, learning, consultation, mediation and tolerance by all members of the Group.

Our group comprised primarily librarians, IT specialists, and archivists. We were very lucky to have on the team one Dublin Core (DC) specialist, others with some DC knowledge, two AGLS experts, and several with an appreciation of the importance of adhering to international standards. Others on the team were highly competent in XML, RDF, security, and technical matters. However, most of us did not have experience in the process of metadata standards development and implementation.

We needed to come to grips with AGLS, DCMES, interoperability requirements, geo-spatial issues, registry issues, directory issues, administrative data matters, and authoring tools. Also, this was effectively the first of the E-government projects, being undertaken whilst the infrastructure and other E-government projects were still being established. Despite this, we needed to make decisions to a very tight timetable set by Government.

The decision by the group to adopt a modified AGLS was not unanimous. During the detailed development stage, we all worked very carefully through the issues relating to interoperability and conformance with current international standards. This required the group to fully understand the portal requirements, in particular, regarding the description of and access to government services as well as government information. A key element of this was developing an understanding of why AGLS had adopted the four extra elements and how this impacted on DCMES extensibility principles.

We are now at the stage of:

- reaching agreement about the NZGLS/AGLS/DCMES relationship;
- establishing a sound governance structure for NZGLS;
- contributing as full members of the AGLS Working Group;
- participating fully in the international DCMI-Government metadata set work; and
- having a fully developed NZ E-government infrastructure and support structure.

Competing Demands

Reaching this stage required the team members to show flexibility, and willingness to negotiate to reach agreement. It became important that members were clear about what they could accept as a compromise and what positions were sacrosanct. As the project progressed, organisational/industry/sector perspectives were put aside to achieve the wider E-government goals.

At the national level, each of the key groups was undertaking programmes requiring global interoperability and transfer of information. They were able to feed their experience, expertise and wisdom into addressing the metadata standard set issues.

National Library of New Zealand

The National Library of New Zealand (NLNZ) actively monitors DCMI activities. In common with other national libraries the library has a large digitisation programme. To assist in the development of this work as well as to support the use of all metadata schemas used for other document types, the NLNZ Metadata Standards framework was released in October 2000 as a work in progress. The framework focuses on resource discovery which is defined as “that

information required to ensure that the materials we have collected are locatable and retrievable by our clients remotely”. “Within NLNZ, Dublin Core will be the metadata set for web based resources...It is recognised that DC will not always satisfy all the requirements of a particular resource set, but it is essential that where specialist metadata standards are used that they encompass the DC element set” (National Library of New Zealand, 2000).

The E-government portal designers required metadata which distinguished between service and document types. They specified that web pages, brochures, or forms describing or supporting the delivery of a service were to be described as “document resources”, related to, but distinct from the description of the service itself.

NLNZ strongly advocated that NZ adopt DC principles in the development of its E-government discovery level metadata. The Library expressed concern that international inter-operability was being overlooked if a local implementation such as AGLS was evaluated without also evaluating other local implementations of DC and understanding them in the broader context of DC.

This concern was taken seriously by the E-government Unit. An international review of the project was undertaken, and a jointly sponsored pilot project which is creating both DCMES and NZGLS metatags of resources and services on the NLNZ Website is assessing any issues identified.

Archives New Zealand (ANZ)

ANZ focus on recordkeeping metadata which seeks to manage records as authentic and reliable evidence over time, compared with discovery metadata which seeks to enable the identification and location of a resource at a point in time. ANZ has sought to ensure a good fit between the NZGLS discovery level metadata and its development of new systems. They are developing a new information system which will capture and manage contextual metadata such as agency, function and record system entities. The future relationship of agency records keeping systems as a source of NZGLS metadata remains an area for ANZ investigation.

ANZ is likely to become the NZGLS maintenance agency, which will ensure that there is congruence between their activities and the E-government work.

Both NLNZ and ANZ had particular interests in the NZMSWG thesaurus sub-project where the project team developed separate New Zealand functions and subject thesauri, and is also to consider the issues relating to a bilingual English and Maori language portal.

NLNZ is likely to become the thesaurus maintenance agency, recognising the Library’s cataloguing expertise, its proficiency with the APAIS thesaurus, and its Index New Zealand (INNZ) product.

Another group with its own strong interest which needed to be accommodated was the geospatial metadata community. Their issues are not addressed further in this paper.

Evolving International Standard Development

The chronology of metadata standards development is also a key factor in analysing why there are differences between DCMES, AGLS, and NZGLS. Each standard set has been developed and issued according to the timetable of its parent organisation. In my opinion, the adoption of the DCMES as ANSI/NISO standard Z39.85-2001, the stronger DCMI organisational structure, and the effectiveness of the DC extensibility principles for application profile development provide a sounder model for E-government developments than was the case when NZ started its work in 2000. Developments are now more likely to be consistent and compatible internationally, and also meet the particular requirements of their jurisdiction.

Information Management Skills Needed for Successful E-government

In my view E-government developments have provided outstanding opportunities for librarians and information management experts to apply at the macro level the skills they use in their own organisations.

For example, in a typical Information Centre, information management staff:

- Develop and implement Information Management principles, policy and standards;
- Design and manage the agency's Website according to those standards;
- Describe and present information and content on the Website in a simple consistent manner that is understood by the users of the Website, i.e. the Public;
- Manage the publication of documents on the Website, ensuring that the latest version is always available;
- Use internal document management systems to automatically feed latest versions to the Website;
- Manage documents, files, records, archives through their life cycle;
- Provide reference and search services to staff;
- Catalogue according to international standards;
- Manage complex information management projects.

We understand cataloguing principles, have a standards-based philosophy for information management, have an understanding of the principles of thesauri and encoding schemes, can assess information systems and tools, and underpin all of this with a sound client service philosophy.

For me in particular, this has meant that I have been able to contribute expert advice also at this macro level. It has also highlighted the value of having professional qualifications in both librarianship and information systems. This has been the most important factor over this period where I have worked with librarians, archivists, and the portal designers to negotiate solutions which can be accepted by all.

Another key outcome has been the appointment of information management staff to key management roles in the E-government Unit. I believe that the NZMSWG project illustrated the

necessity of utilising professionals with core information skills and expertise in order to achieve the E-government vision successfully.

CONCLUSION

This has been a really exciting and rewarding period of being involved in effecting major change in the delivery of government information and services at a national level and within my own agency.

The key messages that have emerged from the NZMSWG project are:

- Core E-government activities need librarians and information management experts – our experience in client service, digitisation, bibliographic description, inter-operability issues makes us leaders in planning for and advising on E-government resource discovery;
- Working on a cross-agency project requires very strong project management methodologies and processes to ensure that the project objectives are met;
- The E-government portal will provide great opportunities for the cultural, heritage, library, archives and museums sectors to promote and market themselves to a global audience.

Finally, the Australian and New Zealand resource discovery work has generated a high level of interest in the international metadata and E-government community. Our decisions to broaden the definition of “resource” to include “services” has put us ahead of many other jurisdictions. The New Zealand E-government Unit is taking this a step further with its portal implementation. This reinforces the importance of global international inter-operability and full participation in international standard development.

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